

Date: Wed, 8 Dec 93 04:30:14 PST  
From: Ham-Ant Mailing List and Newsgroup <ham-ant@ucsd.edu>  
Errors-To: Ham-Ant-Errors@UCSD.Edu  
Reply-To: Ham-Ant@UCSD.Edu  
Precedence: Bulk  
Subject: Ham-Ant Digest V93 #136  
To: Ham-Ant

Ham-Ant Digest                      Wed, 8 Dec 93                      Volume 93 : Issue 136

Today's Topics:

9913, N Connectors and Water Tight Seal  
First antenna for 160 meters  
First antenna for 160 meters(continuously loaded???)  
GAP DX-VI Antenna  
How do you couple to a "Quad" ? (3 msgs)  
Rugged 2 meter antenn  
Setting up a HY-GAIN vertical.  
Yagi question

Send Replies or notes for publication to: <Ham-Ant@UCSD.Edu>  
Send subscription requests to: <Ham-Ant-REQUEST@UCSD.Edu>  
Problems you can't solve otherwise to brian@ucsd.edu.

Archives of past issues of the Ham-Ant Digest are available  
(by FTP only) from UCSD.Edu in directory "mailarchives/ham-ant".

We trust that readers are intelligent enough to realize that all text  
herein consists of personal comments and does not represent the official  
policies or positions of any party. Your mileage may vary. So there.

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Date: Mon, 6 Dec 1993 19:03:36 GMT  
From: nih-csl!helix.nih.gov!mack@uunet.uu.net  
Subject: 9913, N Connectors and Water Tight Seal  
To: ham-ant@ucsd.edu

In article <seeler.63.0@UPEI.CA> seeler@UPEI.CA (David Seeler) writes:  
>Earlier this year a question arose as to how to dry out 9913 in which  
>water had apparently been able to enter the cable at the junction  
>with the antenna. A number of responses were made as to how to seal  
>the joint at that time and it seems that I have lost the information.  
>  
>From memory I recollect the following:  
>  
>1. Use N connectors and install them PROPERLY!  
>

>2. Before putting the connector on the cable - seal the cable with a non-  
> conductive, noncorrosive compound.  
>  
>3. Use a combination of Scotch Kote and quality tape layers to seal the  
> joint after the connector is placed and attached to the antenna.  
> Mentioned were 23, 33 and 88 brands of tape I believe.  
>  
>Is this correct?  
>  
>If so - suggestions as to the compound used to seal the 9913 before placing  
>the N Connector? Also - since my cable is on order ( none on the island )  
>suggestions as to how to do this without harming the cable - or is the  
>air channel that large?  
>  
>Which of the tapes mentioned above is better - or is it a matter of what you  
>can get your hands on?  
>  
>Instead of Scotch Kote others had mentioned other compounds - suggestions  
>anyone? Can coax-seal with proper tape and taping job work?  
>  
>Your comments and suggestions would be GREATLY appreciated. This cable will  
>be used for the 440 MHz run ( and the last part of the setup ) for a  
>digital satellite station and I would like it to last for a while :-).  
>  
>  
>73 for now - David Seeler, VY2DCS  
>Internet: SEELER@UPEI.CA  
>  
>  
>

-----  
Date: Mon, 6 Dec 1993 03:43:41 GMT  
From: agate!iat.holonet.net!rohrwerk@ames.arpa  
Subject: First antenna for 160 meters  
To: ham-ant@ucsd.edu

n4hy@tang.ccr-p.ida.org (Bob McGwier) writes:

>I am a 160 meter operator at N2RM and that is a site that uses inverted  
>L's. They perform brilliantly and have a nice low angle of radiation.  
>You do definitely want the performance enhancement you will get from the  
>vertical portion for the skywave coming in on 160. HOWEVER, the antenna  
>will be CRAP if you cannot lay out a bundle, and I do mean a bundle of  
>radials. If you do not have room for quarter wave radials, 30-50 of them,  
>go with the inverted vee.

>Bob

General agreement here. However, you may get good performance with fewer radials (much more than three, however!) of shorter length. See the ARRL Antenna Book, page 3-13, for a nice chart of optimum length/number tradeoffs. For example, for 36 radials, they can be 0.15 wavelength, for a low-angle power loss of only 1.5 dB. For 24 radials, they recommend 0.125 wavelength, yielding power loss of 2 dB.

John K0JD

-----  
Date: 8 Dec 93 02:27:29 GMT  
From: ogicse!cs.uoregon.edu!sgiblab!sdd.hp.com!col.hp.com!srigenprp!  
alanb@network.ucsd.edu  
Subject: First antenna for 160 meters(continuously loaded???)  
To: ham-ant@ucsd.edu

Salonen Jukka (jps@cs.tut.fi) wrote:

: In article <Dec02.203026.84765@yuma.ACNS.ColoState.EDU>

galen@picea.CFNR.ColoState.EDU (Galen Watts) writes:

: >I've thought about a continuously loaded (read: slinky style) vertical  
: >or possibly a cont loaded dipole for 160. The dipole version could  
: >be made small enough to rotate! Has anyone done something like this  
: >beyond the sparse articles in ARRL literature????

: I am not expert on this but IMHO you can put normal dipole/inv vee(if  
: you have enough space for it) because if you cant put it high enough,  
: the radiation diagram for dipole remains a potatoe ;).

^^^^^^

(Jukka spells like our former Vice President! :=)

I agree that antenna efficiency is more important than directivity for 160 meter transmitting antennas. As Jukka says, a dipole at any reasonable height on this band will be pretty much omni-directional.

For RECEIVING antennas, just the opposite is true. Efficiency is not important, but directivity is. A good combination would be a vertical or dipole as tall/high as you can get for transmitting. And a tuned, shielded loop antenna for receiving, between one and a few meters in diameter. That way you get the good efficiency for transmitting and good directivity (and also out-of-band interference rejection) for receiving.

AL N1AL

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Date: 6 Dec 93 22:52:05 GMT  
From: usc!howland.reston.ans.net!cs.utexas.edu!swrinde!dptspd!ephsa!  
lou@network.ucsd.edu  
Subject: GAP DX-VI Antenna  
To: ham-ant@ucsd.edu

John -

I have been using a GAP EAGLE DX-VI for a couple of years, and am quite happy with it. Easy set-up, minimal tuning, good stability, -NO RADIALS- (I don't count the counterpoise as a radial system). My first "bounce" seems to be about 1800 miles. Have worked DX with Australia, New Zealand, Great Britain, Italy & Germany.

73        Lou  
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Rivercity Matrix -- +1 (210) 561-9815/21 -- San Antonio, Texas

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Date: Tue, 07 Dec 1993 15:21:07 GMT  
From: yuma!galen@purdue.edu  
Subject: How do you couple to a "Quad" ?  
To: ham-ant@ucsd.edu

In article <2e0fkh\$r7l@agate.berkeley.edu> ron@etch-eshop.Berkeley.EDU (Ronald Viegelaahn) writes:

> Hello  
> I have a question about a " Quad " antenna. What method of  
>coupling is usually used ?  
> My old 1978 handbook shows it being driven off the end of  
>75 ohm coax, with a formula of  $L = 251 \text{ over } f \text{ in Mhz. } L \text{ being}$   
>the distance to the transitter.  
>I'm a little confused.  
>ron@etcheshop.Berkeley.EDU

I have a 3 ele 2m quad, and I use a 1/4 wavelength section of RG-6 (70 some ohms) as a matching section. SWR is lower than 1.5:1 across the FM portion of 2m. You need to correct for velocity factor. See the ARRL handbook or Antenna book for details.

Galen, KF0YJ

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Date: 7 Dec 93 15:51:07 GMT  
From: ogicse!henson!netnews.nwnet.net!raven.alaska.edu!acad2.alaska.edu!  
auchd@network.ucsd.edu  
Subject: How do you couple to a "Quad" ?  
To: ham-ant@ucsd.edu

In article <2e0fkh\$1r7l@agate.berkeley.edu>, ron@etch-eshop.Berkeley.EDU (Ronald Viegelaahn) writes:

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> the distance to the transitter.  
>  
> I'm a little confused.  
>  
>  
> ron@etcheshop.Berkeley.EDU  
>  
>

A one wavelength quad exhibits a resistance of 100 ohms at the feed. The traditional way to feed it is to use a 1/4 wavelength matching section of 75 ohm cable connected at the feed of the antenna, then coupled to 50 ohm cable which runs to the rig. This matches the 100 ohms of the antenna to the 50 ohm balance of the input on the rig.

For multiband operation you can feed the quad with balanced line (450 or 300 ohm), run it to a transmatch. I'm going to give the multiband option a try. I know the 1/4 wavelength matching method works pretty good.

James M. Wiedle WL7NO

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Date: Tue, 7 Dec 1993 18:18:39 GMT  
From: spsgate!mogate!newsgate!slick!smitht@uunet.uu.net  
Subject: How do you couple to a "Quad" ?  
To: ham-ant@ucsd.edu

Typically a quad exhibits an impedance of 120 to 200 ohms. The 1/4 wavelength of 75ohm co-ax is a cheap way to match the 120/200 ohms.

I use 4:1 current baluns on my 40m/30m/20m/17m/15m quad loops  
with SWR 1:1 at center freq.

bandwidth for 1.5 swr is 300-500khz depending on band.

not a cheap solution but quicker than trimming 75 ohm co-ax  
with my noise bridge.

Trevor G3WQ0/AB5EU still exiled in Texas.....

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Date: Mon, 06 Dec 1993 23:39:56 -0500  
From: usc!howland.reston.ans.net!spool.mu.edu!think.com!spdcc!merk!  
harvee.billerica.ma.us!esj@network.ucsd.edu  
Subject: Rugged 2 meter antenn  
To: ham-ant@ucsd.edu

In <931204075944230@pubcon.fort-worth.tx.us>, BRIAN OAKLEY writes:  
>anyone ever uses a mag mount 5/8 wave 2 meter whip stuck on a bike book  
>rack? looks like this would work ok. i have not tried this yet but  
>seems a simple way to put an antenna on a bicycle. 73 wb5kxw

A friend of mine uses a 5/8 wave whip on his bike but he needs a counter-poise  
to get the swr down. I use a 1/2 wave antenna on my recumbent and it works  
rather well.

--- eric

--

HOME: esj@harvee.billerica.ma.us HAM ka1eec  
WORK: esj@temerity.polaroid.com 617.386.4687  
source of the public's fear of the unknown since 1956

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Date: 8 Dec 93 03:05:43 GMT  
From: ogicse!emory!europa.eng.gtefsd.com!howland.reston.ans.net!spool.mu.edu!  
umn.edu!news@network.ucsd.edu  
Subject: Setting up a HY-GAIN vertical.  
To: ham-ant@ucsd.edu

On 2 Dec 93 14:26:00 GMT, Jim Hefferon wrote:

>Hello,  
>I'm a Novice. I got an antenna as part of a package (along with a  
>tranciever, etc.) that has no documentation. I was wondering if some  
>kind soul could give me some hints as to how to proceed. I'm specifically







>I've talked about making linear polarized beams from two helices with another  
>ham and we've both reached the same and rather discomfoting conclusion  
>that the power that is in the direction which is not radiated in the forward  
>direction is instead radiated in weird side lobes. The thinking goes like this-  
>replace the helix by two cross yagis (or dipoles for the sake of the arguement)  
>fed 90 etc to get circular polarised radiation. Next put two of these  
>next to each other in oppisite sense. Now consider tha case where the  
>two sets of antennas are far enough apart that they are not in each  
>other's near field, ie they are independent radiattoors. Say the hoirizontal  
>dipoles are in phase and the vertical ones are 180 out of phase (ie  
>so we get horz radiation). Being orthogonal the H and V beams can be  
>considered indepenently . The horizonatal ones add. Aeveryone agrees on that.  
>In the forward direction the vertical diploes cancel so that we get no  
>vertical polarised radiation int eh forward direction. EVeryone agrees on  
>that too. However in some direction off to the side thaey will add , giving  
>all the power in side lobes for vertical radioation. In the case when  
>the radiators in in each other's near field , then mutual impedances etdc will  
make the  
>whole thing too compicated for me to even think about.  
> Anyone know if this is right.?  
> Joe NA3T  
> mack@ncifcrf.gov

Your reasoning would be correct at sufficiently large  
spacings, but for reasonable spacings, by the time the  
angle gets large enough to make the vertical beams add  
instead of cancel, the gain of the vertical beams should  
be less than a dipole. So the combination of the two will  
make the side lobes that are there anyway a little worse.  
I guess the issue is how big a deal is sidelobe  
suppression anyway; I would say for ham radio (as opposed  
to say radar) it is not a big deal. [Disclaimer: I've  
never built this antenna, so this is just my opinion of  
the theory]

Rick N6RK  
rkarlqu@scd.hp.com

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End of Ham-Ant Digest V93 #136  
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